

LESS-INVASIVE DEVICES AND METHODS FOR CARDIAC VALVE SURGERY

ABSTRACT OF THE DISCLOSURE

5 Systems and methods are disclosed for performing less-invasive surgical procedures within the heart. A method for less-invasive repair or replacement of a cardiac valve comprises placing an instrument through an intercostal access port and through a penetration in a wall of a vessel in communication with the heart, advancing the instrument into the heart, and using the instrument to perform a surgical

10 intervention on a cardiac valve in the heart under visualization through an intercostal access port. The surgeon's hands are kept outside of the chest during each step. The surgical intervention may comprise replacing the cardiac valve with a prosthetic valve, wherein the native valve is removed using a tissue removal instrument, the native valve annulus is sized with a specialized sizing device, a prosthetic valve is

15 introduced through an intercostal access port and through the penetration in the vessel, and the prosthetic valve is secured at the native valve position, all using instruments positioned through intercostal access ports without placing the hands inside the chest. Systems and devices for performing these procedures are also disclosed.